

Advancement Handbook for Aviation Warfare Systems Operator (Non- Acoustic)

PREFACE

The purpose of the Advancement Handbook is to help you focus your preparation for Navy-wide advancement-in-rating examinations. The bibliographies (BIBs) together with this handbook form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the Aviation Systems Operator (Non-Acoustic) rating, it helps you concentrate your study on those areas that may be tested. This feature will help you get the most out of your study time.

Each page in Parts 1 through 4 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent references required to perform each skill, and the types of subject areas that may be covered on the examination. The skill statements are cumulative; that is, you are responsible for the skills for the paygrade you are competing for, your present paygrade, and all paygrades below.

Although this handbook is very comprehensive, it cannot cover all the tasks performed in the rating. As a result, the advancement examinations may contain questions more detailed than described in the *"Exam Expectations"* section of the skill areas.

Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study but also sustained superior performance.

Prepared by

Navy Advancement Center Department
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Part 1

Advancement Handbook for AWN3

Advancement Handbook for AWN3

General AWN <i>Skill Area</i>	Perform general aircrew duties.
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform aircraft preflight/ in-flight/post-flight duties
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Perform aircraft preflight inspections • Service aircraft • Perform equipment preflight inspections • Perform passenger briefs • Perform emergency drills • Perform in-flight operational tests • Perform aircraft post-flight inspections • Perform on-station mission turnovers
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • OPNAVINST 3710.7 (Series) • NAVAIR 01-75PAC-1.1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the individual elements of aircraft preflight, such as FOD walkdown, aircraft servicing, survival gear checks and aircraft equipment preflight checks; inflight equipment checks, emergency drills and aircraft postflight checks

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General AWN <i>Skill Area</i>	Aircrew Training
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform Aircrew NATOPS, survival, SAR, Tactical, Weapons, and Sensor training
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Conduct NATOPS training exercises • Conduct water survival exercises • Conduct land survival exercises • Conduct survival first aid exercises • Conduct airborne training exercises • Conduct aircraft, ship, and submarine recognition exercises • Conduct warfare training exercises
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • ATP-1 • DIAM 57-25 (Series) • FXP-1 • OPNAVINST 3710.7 (Series) • NAVAIR 00-80T-101 • NAVAIR 01-75PAC-1.1 • NAVAIR 28-SSQ-500-1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on NATOPS training; water and land survival procedures, general first aid procedures; aircraft, ship and submarine recognition; and Allied/Fleet training exercises

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General AWN <i>Skill Area</i>	Aircrew Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain enlisted flight time records
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Prepare daily flight schedules • Conduct monthly flight time audits • Prepare monthly flight hour summaries • Prepare enlisted personnel flight time summaries • Update flight time log books • Prepare aircraft passenger manifests • Transfer passengers (military, civilian, etc.)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • NAVAIR 01-75PAC-1.1 • OPNAVINST 3710.7 (Series)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the drafting and filing of daily flight schedules, as well as requirements and procedures for auditing and tracking of enlisted flight time

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General AWN <i>Skill Area</i>	Environmentals
A <i>skill</i> you are expected to perform from the General Skill Area above:	Interpret environmental data and contour charts Solve ASW equations
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Calculate predicted transmission path ranges • Calculate Figure of Merit • Draw ambient air temperature profiles • Label ambient air temperature profiles • Analyze weather temperature data • Evaluate Magnetic Anomaly Detection (MAD) operational effectiveness (MOE) chart
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • ATP 28 • NWP 3-13.1.13 • NWP 3-22.5-P3 • NWP 3-22.5-ASW TAC • RP 33
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the effects of environmental changes on acoustic and non-acoustic transmission paths, as well as the different parts and uses of MOE charts

Advancement Handbook for AWN 3

General AWN <i>Skill Area</i>	Tactical/Mission Support
A <i>skill</i> you are expected to perform from the General Skill Area above:	Store and maintain aircraft recording data Maintain logs, charts and publications Research and evaluate publications and tactical messages
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Update ES logs • Update contact logs • Research and update tactical publications libraries • Update tactical publications • Prepare and update mission brief books • Prepare and update mission summary logs • Perform data extractions • Enter real-time tactical data • Enter post-flight tactical data • Analyze post-flight tactical data • Duplicate recording media
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • NWP 1-01 • NWP 3-13.1.13 • NWP 3-22.5-P3 • OPNAVINST 5510.1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<p>You can expect questions concerning subject matter of specific tactical publications, maintenance of tactical publication libraries, and updating/maintaining ES/contact logs. Also, questions concerning tactical data handling may be asked</p>

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General AWN <i>Skill Area</i>	Communications
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform tactical communications
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Perform Brevity Code communications • Perform radio circuit communications • Perform visual signals communications • Perform Intercommunications systems (ICS) communications • Test communications systems • Perform secure communications • Perform nonsecure communications
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • ACP-165 • NAVAIR 01-75PAC-1.1 • NAVAIR 00-80T-113 • NWP 1-01 • NWP 3-22.5-P3
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning all aspects of radio communications, visual hand signals, land survival signals, and the use of various signaling devices

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General AWN <i>Skill Area</i>	Sensor Systems
A <i>skill</i> you are expected to perform from the General Skill Area above:	Draw sensor system block diagrams.
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none">• System signal flow
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none">• NAVAIR 01-75PAC-1.1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning system block diagrams and system signal flow

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General AWN <i>Skill Area</i>	Search/Kill Stores Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Handle and load search/kill stores
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Set search stores • Load/unload search stores • Arm/de-arm search stores • Launch search stores • Set kill stores • Load kill stores • Arm/de-arm kill stores • Track ordnance expenditures • Program weapon station stores (Torpedoes) • Conduct Antisubmarine Warfare (ASW) search stores inventory • Procure ASW search stores • Install/remove sonobuoy cartridge activated devices (CADs) • Load/unload aircraft-mounted small arms • Monitor weapons deployments
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • NAVAIR 28-SSQ-500-1 • NWP 3-22.5-P3 • NWP 3-22.5-ASW TAC
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning individual specifications of search/kill stores and search/kill store handling, loading, and unloading

Advancement Handbook for AWN3

General AWN <i>Skill Area</i>	RADAR/ISAR/IFF and Navigation Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct RADAR/ISAR searches Interpret RADAR/ISAR video Carry out tactical RADAR/ISAR operations
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Calculate RADAR formulas • Convert True/Relative/Magnetic bearings • Calculate RADAR ranges • Analyze/classify/fix RADAR contacts • Track airborne/land/sea RADAR contacts • Calculate RADAR contact courses/speeds • Identify RADAR contact maneuvers • Perform navigational updates • Select/modify RADAR frequencies • Conduct RADAR searches • Vector aircraft • Establish RADAR/ISAR stand-off distances • Calculate RADAR operations optimum altitudes • Perform weather/terrain avoidance navigation • Conduct over-the-horizon detection/targeting • Perform IFF/SIF interrogations • Classify radio frequency (RF) interference • Classify multi-target contacts • Determine optimum ISAR effectiveness • Record ISAR video data
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • ATP-28(A) • NAVAIR 01-75PAC-1.1 • NEETS MODULES • NWP 3-20.5-P3

<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on RADAR, ISAR and IFF theory; operations; tactics; and troubleshooting procedures
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Advancement Handbook for AWN3

General AWN <i>Skill Area</i>	Infrared (IR) Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct IR searches Interpret IR data Carry out IR tactical operations
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Calculate IR formulas • Determine optimum IR effectiveness • Calculate IR ranges • Identify IR contacts • Classify IR contacts • Fix/track IR contacts • Calculate IR contact courses/speeds • Identify IR contact maneuvers • Identify IR countermeasures • Identify thermal discontinuity • Record IR video contacts • Conduct IR battle damage assessment • Load/unload IRDS tapes
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • ATP-28(A) • NAVAIR 01-75PAC-1.1 • NWP 3-20.5-P3
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on Infrared theory, operations, tactics, and troubleshooting procedures

Advancement Handbook for AWN3

General AWN <i>Skill Area</i>	Electronic Warfare Support (ES) Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct ES searches Interpret ES data Carry out ES tactical operations
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Calculate ES ranges • Determine optimum ES effectiveness • Load/modify/download Apriori tableaus • Conduct ES searches • Classify ES contacts • Plot/fix/track ES contacts • Modify ES libraries • Calculate ES target courses/speeds • Compute ES contact intercepts • Record ES parameters • Conduct Hull to Emitter Correlations (HULTEC)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • ELINT Parameters List (EPL) • NAVAIR 01-75PAC-1.1 • NWP 3-13.31 • NWP 3-22.5-P3
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on EW theory, operations, tactics, and troubleshooting of ES equipment

Advancement Handbook for AWN3

General AWN <i>Skill Area</i>	Magnetic Anomaly Detection (MAD) Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct MAD searches Interpret MAD data Carry out MAD tactical operations
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Calculate MAD formulas • Determine optimum MAD effectiveness • Hook MAD contacts • Analyze MAD contacts • Classify/fix/track MAD contacts • Calculate MAD slant ranges • Compute target depths • Identify MAD contact maneuvers • Identify MAD noises • Filter out MAD noises • Calculate MAD contact courses/speeds • Perform Operational Figure of Merit (OFOM) • Perform MAD compensations
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • ATP-28 • NAVAIR 01-75PAC-1.1 • NWP 3-22.5-P3
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on MAD theory, operations, tactics, and MAD equipment troubleshooting

Advancement Handbook for AWN3

General AWN <i>Skill Area</i>	Visual/Photographic Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct visual searches Identify/evaluate/report visual contacts Conduct photographic operations
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Conduct NVG searches • Conduct searches (other than NVG) • Perform visual hazardous terrain avoidances • Conduct drug interdiction searches • Load intelligence gathering cameras • Perform visual searches • Classify visual contacts • Estimate sea states
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • NWP 3-22.5-P3
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning the tactics/use of Night Vision Goggles (NVGs) and photographic equipment. Also, expect questions concerning the procedures and tactics for performing visual searches

Part 2

Advancement Handbook for AWN2

Advancement Handbook for AWN2

General AWN <i>Skill Area</i>	Aircrew Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain NATOPS training jackets
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none">• Administer NATOPS programs• Update NATOPS training jackets
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none">• OPNAVINST 3710.7 (Series)• NAVAIR 01-75-PAC-1.1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning all aspects of the NATOPS program

Advancement Handbook for AWN2

General AWN <i>Skill Area</i>	Tactical/Mission Support
A <i>skill</i> you are expected to perform from the General Skill Area above:	Enter flight data into tactical data bases
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Update Aviation Warfare (AW) intelligence databases • Update AW electronic warfare databases • Update environmental databases • Evaluate environmental data • Conduct flight crew briefs/debriefs • Conduct post-flight analysis (PFA) • Perform tactical mission reconstruction • Load/unload Preflight Data Insertion (PDIP) tapes
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • NWP 3-22.5-P3
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on intelligence, electronic warfare, and environmental databases; as well as questions concerning briefing/debriefing procedures and tactical mission reconstruction

Part 3

Advancement Handbook for AWN1

Advancement Handbook for AWN1

General AWN <i>Skill Area</i>	Training Management
A <i>skill</i> you are expected to perform from the General Skill Area above:	Establish and maintain aircrew training programs Conduct training Evaluate training effectiveness Coordinate aircraft safety and inspection programs
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Establish/update aircrew training programs • Evaluate aircrew training programs • Coordinate/update/evaluate aircrew qualification and readiness programs • Evaluate sensor operators proficiencies • Administer NATOPS testing • Coordinate NATOPS check rides
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • NWP 3-22.5-P3 • OPNAVINST 3710.7 (Series)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning all aspects of aircrew and NATOPS training programs

Advancement Handbook for AWN1

General AWN <i>Skill Area</i>	Aircrew Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain Acoustic and Nonacoustic signature libraries Assist in the planning of tactical missions
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none">• Establish AW tape management programs• Update acoustic contact history records• Plan tactical missions
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none">• NWP 3-22.5-P3
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on signature libraries and tactical mission planning

Part 4

Advancement Handbook for AWC

Candidates for advancement to AWC are responsible for all skills and knowledges for the AWA, AWH, and AWN ratings at the E-4, E-5, and E-6 paygrade levels. Refer to the Advancement Handbook for each rating for this information and for exam references

Appendix 1

References Used in This Advancement Handbook

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AWN3	ACP 165(F)	Operational Brevity Codes	N/A	Note 1
	Air ASW SUP	Air ASW Supplement, NWP 3-22.5-ASW SUPP		Note 1
	ATP 28(A)	Allied Antisubmarine Warfare Manual		Note 1
	DIAM 57-25 Series	Recognition Guides		Note 2
	EPL	ELINT Parameter Limits (EPL) List		Note 3
	EPL NON-COMMUNIST SUPPLEMENT	ELINT Parameter Limits (EPL) List Non-Communist Bloc Military Supplement		Note 3
	FXP-1	Antisubmarine Warfare (ASW) Exercises (U)		Note 5
	JCS PUB 3-50	National Search and Rescue Manual (Vol I)		Note 4
	JCS PUB 3-50.1	National Search and Rescue Manual (Vol II)		Note 4
	NAVAIR 00-80T-101	NATOPS Survival Manual		Note 1
	NAVAIR 00-80T-113	Aircraft Signals NATOPS Manual		Note 1
	NAVAIR 01-75PAC-1.1	NFO/AIRCREW NATOPS Manual P3A/B/C		Note 1
	NAVAIR 28-SSQ-500-4	Sonobuoy Instructional Manual		Note 1
	NAVEDTRA 12043	Basic Military Requirements		Note 1
	NAVEDTRA 12044	Military Requirements for Petty Officer Third Class		Note 1
	NAVEDTRA 172-01-00-83	Navy Electricity and Electronics Training		Note 1

		Series (NEETS) Modules 1, 17, and 18		
	NWP 1-01	Naval Warfare Publication System		Note 1 & 5
	NWP 1-03.1	Operational Reports		Note 1 & 5
	NWP 3-50.1	Navy Search and Rescue (SAR) Manual		Notes 1 & 5
	NWP 3-13.1.13	Electronic Warfare Coordination		Notes 1 & 5
	NWP 3-22.5-P3	P-3 Tactical Manual		Notes 1 & 5
	NWP 3-22.5-ASW SUP	Air ASW Supplement		Notes 1 & 5
	NWP 3-22.5-ASW TAC	Air ASW TACAID		Notes 1 & 5
	OPNAVINST 3710.7	NATOPS General Flight and Operating Instructions		Note 6
	OPNAVINST 5510.1	Information and Personnel Security Program Regulation		Note 6
	RP 33	Fleet Oceanographic and Acoustic Reference Manual		Note 7
AWN2	NAVEDTRA 12045	Military Requirements for Petty Officer Second Class		Note 1
	NAVEDTRA 43100-1D	PQS Managers Guide		Note 1
	OPNAVINST 3750.6	The Naval Aviation Safety Program		Note 6
AWN1	NAVEDTRA 12046	Military Requirements For Petty Officer First Class		Note 1
	NWP 1-10.22, VOL1	Passive Acoustic Classification Reference Manual		Notes 1 & 5
	NWP 1-10.2, VOL 1	Principles of LOFARGRAM Analysis		Notes 1 & 5

LEGEND:

Note 1 – To order, MILSTRIP to NAVICP PHILA or via INTERNET
<http://www.nll.navsup.navy.mil>

Note 2 – DIAR 59-1

Note 3 – Message request to: NSA FT Meade or
LTR request to: Director
National Security Agency
9800 Savage Road
FT George Meade MD 20755-6000

Note 4 – Available via INTERNET <http://www.dtic.mil/doctrine/jel/index.html>

Note 5 – NTIC SERIES B1 (CD-ROM) See your command NWP custodian)

Note 6 – Available VIA the INTERNET <http://www.nll.navsup.navy.mil> or
<http://neds.nebt.dabs.mil>

Note 7 – Requests should be made via validating type commander and directed to
Commander
Naval Intelligence Command (Attn: NIC-522)
4600 Suitland Road
Washington, D.C. 20389-5000